

PATENT ABSTRACTS OF JAPAN

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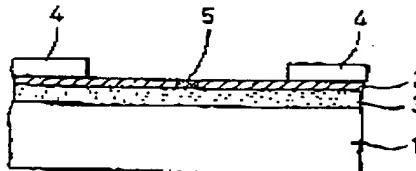
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(54) ELECTRON EMITTING ELEMENT

(57)Abstract:

PURPOSE: To prevent a base board from cracking and a film from exfoliation by furnishing an intermediate layer between the base board and film, and eliminating generation of strain due to internal stress of the base board at the time of heating by current supply and at driving for electron emission.

CONSTITUTION: Local heat emission generated at a high resistance part 5 when current is supplied for heating and electrons are emitted, is conducted to an intermediate part 3 and dispersed there quickly. This intermediate part 3 is made of a film material containing chiefly SiO₂ or Si₃N₄ having a low coefficient of expansion and high thermal conductivity. The heat generated is conducted in a wide interface between the base board 1 and intermediate layer 3 and dispersed in the base board 1. This suppresses local heating in the base board 1, and strain therein does not become large. Because the heat emitting part of film 2 is in contact with the intermediate layer 3, the internal stress generated is also small. This accomplishes a surface conductive electron emitting element, in which no crack will be initiated in the base board nor the film 2 be exfoliated.



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